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The JOURNAL of GEOGRAPHY

A MAGAZINE FOR TEACHERS

VOLUME XX NUMBER 2

FEBRUARY, 1921

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SUBSCRIPTION TERMS

The *Journal of Geography* is published monthly except June, July, and August.

The subscription price is $2.00 a year, payable in advance; the price of single copies is 25 cents. Orders for less than a half year will be charged at single-copy rate.

Postage is prepaid by the publishers on all orders from the United States, Mexico, Cuba, Porto Rico, Panama Canal Zone, Republic of Panama, Hawaiian Islands, Philippine Islands, Guam, Samoan Islands, Shanghai.

Postage is charged extra as follows: For Canada, 30 cents on annual subscriptions (total $2.30), on single copies 3 cents (total 28 cents); for all other countries in the Postal Union, 52 cents on annual subscriptions (total $2.52), on single copies 6 cents (total 31 cents).

The *Journal* is the official organ of the National Council of Geography Teachers and is sent to all members of the organization. The annual dues, $1.50, are payable to the *Business Manager*. Extra postage rates for copies sent to foreign countries should be added to the membership dues.

Patrons are requested to make all remittances payable to the *Business Manager*, in postal or express money orders or bank drafts.

It is assumed that members and subscribers wish to continue receiving the *Journal*. However, remittances must be sent promptly to assure your volume being complete.

Send manuscript and books for notice or review to the editor.

Send orders for back numbers to May, 1920 inclusive to the editor.

Published monthly except June, July, and August

BY

A. J. NYSTROM AND COMPANY

PUBLICATION OFFICE, 450 AHNAIP STREET, MENASHA WIS

GENERAL OFFICES, 2249 CALUMET AVENUE, CHICAGO, ILLINOIS

Entered as second-class matter January 15, 1919, at the postoffice at Menasha, Wisconsin, under the Act of March 3, 1879.

The JOURNAL of GEOGRAPHY

VOLUME XX FEBRUARY, 1921 NUMBER 2

HOME INTRODUCTION TO REGIONAL GEOGRAPHY: RHODE ISLAND

ROBERT M. BROWN

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THE PROBLEM

The study of regional geography has its home aspects and is not unlike the other phases of geography in this respect. The regional unit is a variable one, depending largely on the type of study desired. A continent may be divided into large regions with a certain degree of economic unity. This in turn may be sub-divided into smaller regions with fewer generalizations and a larger attention to details of occupation. In the grade schools to-day there is an hiatus between the teaching of the land forms in the neighborhood (the third magnitude land forms of some writers) and the sub-divisions of the continents into plateaus, plains and the like (the second magnitude land forms). This breach is so rarely filled, that in many instances there remains in the minds of the products of our schools no adequate conception of many of the more common land forms. For example, there persists from school days the conception of a plateau with a level topped surface which will permit uninterrupted and easy progress from end to end; in the picture there is no place for the common type highly dissected by streams. The pupils of the fourth grade study the hills, valleys, plains and the other forms which go to make up a second magnitude plain; the pupils of the fifth grade study the second magnitude plains, the prairies for instance of North America, and they may sometimes realize that the plains of grade five may by analysis be made up of the valleys and hills of grade four; or conversely that the hills and valleys of grade four may by synthesis make the plain of grade five; they may do this, but, if they do, it is not the usual procedure. Teachers find this transitional phase of teaching a difficult one and to a large degree it is insurmountable unless the step is taken at once—in the fourth grade or wherever the land forms are first studied. Likewise in the regional geography a similar difficulty will arise if there is introduced either thru carelessness or thru ignorance

the idea that the regional geography study pertains more to areas away from home. The small and—to the student—the insignificant region at home should form the beginning of regional geography work, and the transitional steps in reasoning from the local area to a single larger region of the continent which includes under its broad generalization all of the local regions should not be neglected. A home geography curriculum, furthermore, that includes within its bounds the study of hills, rivers, and the other land elements of the home environment but has no advanced aspect is inadequate—is merely a nominal recognition of home geography. Home geography to be successful, and by this is understood its power to interpret to the child distant features, must bring the child and the curriculum together, without the teacher acting as mediator between the two. Dewey[1] states that "the great waste in the schools comes from his (the child) inability to utilize the experience he gets outside of school in any complete and free way within the school itself while on the other hand he is unable to apply in daily life what he is learning in school."

In general the division of the earth into regions is based first of all upon climate and then upon topography. A similar subdivision is now made of a small area, Rhode Island, for the purpose of illustrating the approach to the study.

THE CLIMATIC FACTOR

In an introduction to regional geography by the use of an area of limited extent, the climate factor is likely to be uniform and the subdivision remains largely a topographical one. Thus, in Rhode Island, the rainfall over the state is practically the same for all parts. There is no difference which affects any occupation in the state altho a somewhat theoretical subdivision is made on a limited amount of data which upholds the general principle that places in the close proximity to the sea receive a greater rainfall than more distant places. The temperature shows unmistakably the influence of the sea in the more equable climate and the longer growing season along the ocean front than in the northern half of the state. The temperature factor has its influence on one industry of the state, namely the summer hotel and cottage business. A careful analysis of the controls of resorts is unnecessary in a study of this nature and the climatic element may be considered as the dominant cause.

[1] The School and Society. Chicago. 1915.

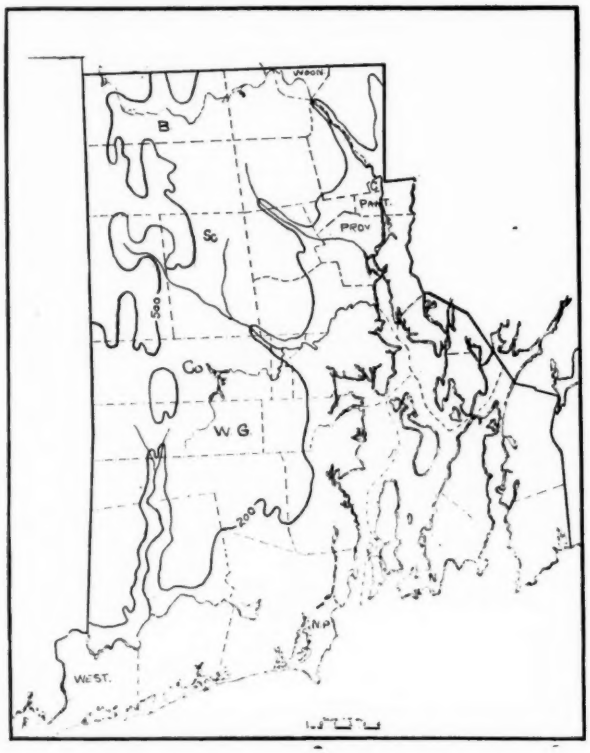
The varied weather of most places in the United States is sufficient to yield a background for the effects of various types of climates. While these types do not extend over a long enough period of time to realize the exact result which the climate of the type effects, yet the tendency is often apparent and sufficiently pronounced not to call upon a high degree of imagination to foretell the results if the spell of weather became protracted. Long rainy spells, long dry spells, cold waves of a week or two duration, a hot wave of similar length, moderate winter seasons and the like are experienced; enough variety to fit most livable conditions on the earth. Temporarily equatorial rainy weather holds sway, and if the aspects of the earth in the home locality do not appear similar to those of the equatorial belt, the effects are similar particularly in increasing the foliage and in eliminating the growth of root crops. So also the other belts of the earth are with us for a brief period and in their sway, the effects of a continued reign may be seen.

Furthermore, if these temporary glimpses of climates are studied with particular areas in view the similarity becomes much more real. Thus the Great Swamp, in southern Rhode Island, the last stand of Canonchet in the King Phillip's War, is a marvelous tangle of wild rhododendrons which easily serves as a measuring rod for an equatorial jungle. Had not winter come to freeze the surface and destroy the jungle character, Canonchet's stronghold would have been a sure one. Swamps in all parts of the land with their tangle of trees wound with grape vines and the green briar show similar characteristics. Again, just south of Providence, extends a great sand plain. It is so porous and so high above Narragansett Bay that the water table is quite beyond the reach of roots of most vegetation, and sparse grasses become the prevailing type of vegetation. Thus, in the humid belt of New England there appears to be a semi-arid area of limited extent. In the early days of Providence, the main thorofare which ran southward over this sand plain was given the name of Prairie Avenue, a name which still exists. In such ways the climatic factor may be studied in a region where climatic belts are absent.

THE TOPOGRAPHIC FACTOR

The topographic factor is the common one which can be used in a small area because small differences in local topography are present in most neighborhoods and to these, occupations show some slight relationships. It is profitable to have the study of the local region a map study as well as a research study, first, because the facts and their

representations on the map are before the student for comparison, and again because the ranges of information conveyed by generalized legends may thereby be demonstrated. A series of maps for Rhode Island with their explanations and correlations will illustrate a type of local approach to the larger regions of the earth.



MAP I

CONTOUR MAP. 200 and 500 foot contours. Towns and rivers referred to in text are shown.

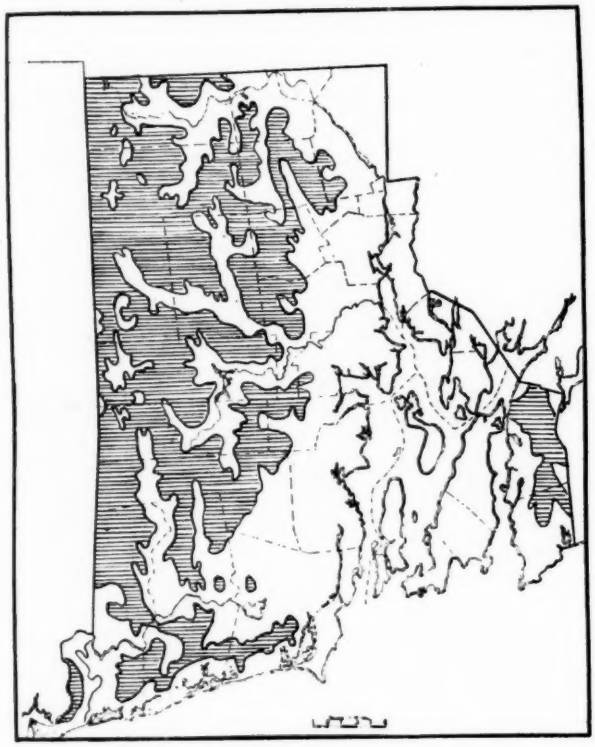
Map I shows the 200 foot and the 500 foot contour lines, and gives the main drainage lines of Rhode Island. Topographic maps in color constructed for the United States are frequently not adapted to the study of the local area. The choice of the contour line which divides the shades are not critical elevations for the limited area necessarily. A few such maps shade the area under the 100 foot contour in one tint, the area between the 100 and 500 foot contours in another, and the area above 500 feet in a third. In Rhode Island the 200 foot contour line approaches most nearly to the critical line of topography. Above

this contour line is the western province of the state, Upland Rhode Island, which is characterized by a mountainous structure of low elevation. The culminating height is 805 feet and only a small part of the state is above the 500 foot level; however, the slopes are steep, the entire area has been subjected to long erosion and glacial attacks with the result of a slight soil cover and a copious outcropping of the bed rock. Practically the only value of the 500 foot contour line is to show the southeast tilting of the southern New England upland. The eastern province of the state, below the 200 foot contour line, includes Narragansett Bay and is termed the Narragansett lowland or basin. This area consists of low hills and plains largely of glacial origin. The hills are smoothly rounded and the soil is deep with but a few bed rock outcrops. This lowland comprises about one-third of the state. The two areas are separated by a sharp east-facing escarpment which runs in a north-south direction across the state parallel with the western shore of the bay and approximately three miles inland. The failure of the 200 foot contour line to separate the provinces is apparent in the southern part of the state where the gradual descent of the upland towards the sea soon brings a portion of it to lowland levels. Thus, the southwestern corner of the state shows upland characteristics somewhat modified. A truer approach to structural regions would be obtained if the 200 foot contour line on Map I, instead of turning westward across the state parallel to the ocean shore, were to be continued southward parallel to the western shore of the bay until it reaches the Atlantic shore.

For the beginner, possibly, the more evident 200 foot contour line may be best used to divide the state into two distinct regions; Upland or Western Rhode Island and the Narragansett Basin or Lowland.

Map II shows the locations of the poorest soil of the state on the western uplands. The extention of this soil into the southern area below the 200 foot contour line indicates the character of the ocean littoral as allied to the upland district rather than to the Narragansett lowland. The borders of this lowland are further indicated in the eastern part of the state in the renewal of this type of soil in the towns east of Narragansett bay. The soil shown upon Map II covering forty-seven per cent of the state is a thin veneer on the rocky structure. In this area projecting ledges and boulders are common reducing the veneer to zero but at the foot of slopes, where thru the movement of soils down the incline a greater depth exists, the soil presents its best aspects. It is covered with a stunted growth of chestnut, oak, white

birch and undergrowth. The Soil Survey[2] of Rhode Island says: "So little is the type cleared and under cultivation that it is difficult to form an idea of its productive capacity. The cleared fields are used largely for pasture and furnish rather uncertain grazing, being easily affected by drought. A very small acreage is planted to corn and potatoes, of which only light yields are obtained. The heavier phase of the type at the foot of some slopes is well suited to general



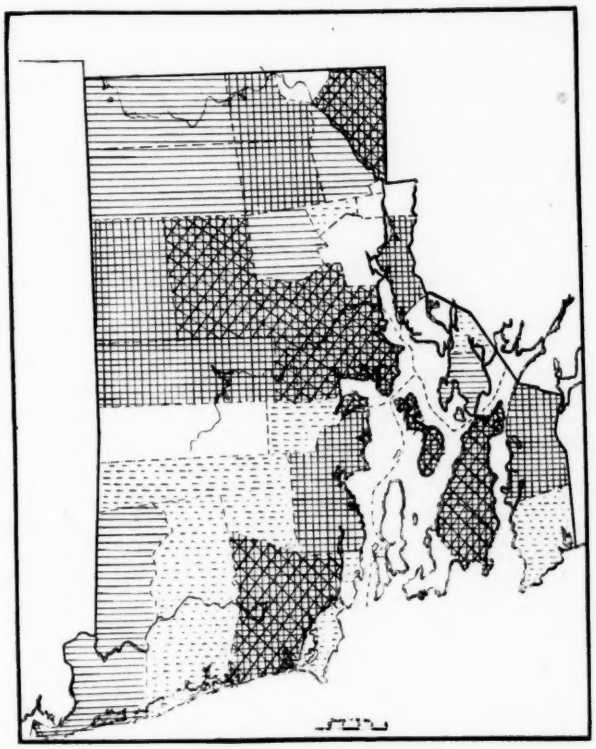
MAP II

SOIL MAP. Shaded area shows the location of the poorest general soil of the state.

farming, being only slightly less productive than the Miami stony loam (the best general soil)." In the remaining area, particularly in the Narragansett lowland, is found the best general soil of the state. This comprises 21.6 per cent of the entire state, and it is characterized by the Soil Survey as ". . . . a typical glacial soil, naturally classed as a 'general farming' or grass and grain soil, and in this section

[2] F. E. Bonsteel and E. P. Carr. U. S. Department of Agriculture. Bureau of Soils. 1905.

such is its general use, grass and corn forming the chief crop interests." A third type of soil is found in the river valleys which break down the upland level as indicated on the map and express themselves slightly on the lowland. This type is spread over 11.8 per cent of the state.



MAP III

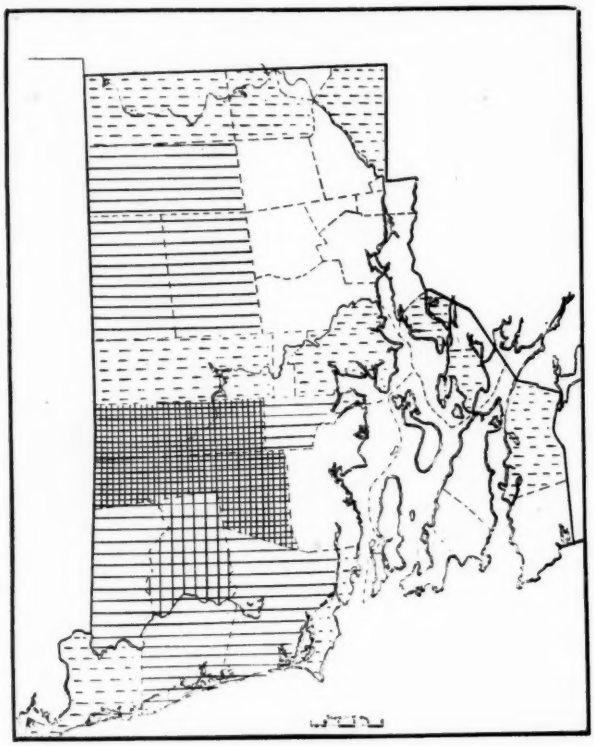
AGRICULTURE MAP. Towns are shaded according to their rank in agriculture. Darkest shades show highest rank.

These two, topography and the soil, to a large degree determine the location of the industries and of the population of the state. The study of these in correlation with the detailed study of occupations and the distribution of population gives an excellent basis for further work in regional geography.

THE OCCUPATIONAL FACTOR

Map III shows the present distribution of agriculture according to the average rank of towns along ten lines, namely, number of farms, value of same, labor, fertilizer used, potatoes, apples, milk, hay, corn,

and eggs. Only one town of the first rank, Scituate (marked Sc on Map I) appears in the uplands and this town shows a large percentage of break in the poor soil of the uplands, due to the courses of the largest tributaries of the Pawtuxet river (marked P. R. on Map I) flowing across it.



MAP IV

Abandoned Farm Map. Darkest shaded towns show greatest acreage in abandoned farms.

The farm acreage in Rhode Island has decreased constantly since 1850 with the exception of 1880 when a slight increase was recorded. This decrease is a natural consequence of the physical factors of the state. First settlers are naturally agriculturalists. This group was never a large one in the state because the change to manufacturing came early in the history of the state and there was besides a small but constant depletion of the farm population during the settlement of the west. Notwithstanding the constant decrease in acreage, there has been an increase in farm values during the years, which is in part the

result of the abandonment of farms on the uplands and the increase of farms on the higher priced lands of the lowlands. In this connection Map IV shows the percentage of land of each town in abandoned farms and emphasizes the difficult farming of the upland area as expressed in changing occupation or changing location. The decrease of population in one or two of the upland towns has been notable within recent years. The difficulty of farming on the uplands is further expressed by the advertisement of farms in this area.

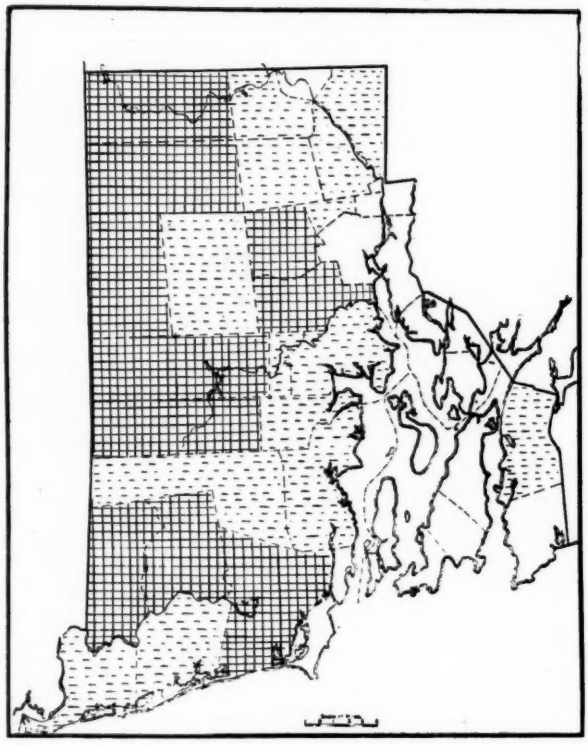
Farm of 160 acres; 2 plowed and tilled, 6 bog meadow, 16 mowing, 75 pasture, 70 woodland; house, barn and shop in good condition; soil, good and suitable for cultivation, 12 fruit trees, church Baptist, ½ mile away, school 1/16 mile, Post Office, Nooseneck, ½ mile market, 7 miles steam and electric railroads, 7 miles roads fair assessed valuation, $1,800. Address. . . . .

This is one of sixty-seven advertised abandoned farms in the town of West Greenwich (marked W. G. on Map I). The analysis of the advertisement would question the statement "soil, good and suitable for cultivation" when but two acres out of 160 acres have been plowed and tilled. In general the poor quality of the land for general agriculture and for market gardens with the long distance to market (long for Rhode Island farmers) is an almost insuperable difficulty.

Market gardens flourish near the greatest centers of population and especially the hotel and cottage settlements of the summer season furnish many of the market garden farmers on the lowlands with an excellent market.

While the two physiographic provinces of the state show marked influences on the promotion of agriculture, it may be interesting to note further that the decrease in agriculture continues with the increase in manufacturing, and when the latter shows a decline the former is likely to show an increase. Thus in 1880, Rhode Island showed a percentage of increase in farm values. For the same period there is noted a decline in manufacturing. This was due to the crisis of 1873 which paralyzed financial operations by a series of colossal failures. More than 5,000 failures occurred in this year and the number of bankruptcies steadily increased until in 1878 the total of 10,478 was reached. This depression affected the industries seriously and factories and shops were closed and nearly three million people were thrown out of work. A large number of these turned to the farms for a living. This however was a temporary arrangement, for when normal conditions were again attained and manufacturing plants began to increase their production, many of these people returned to the shops and agriculture in the state continued its downward movement.

Map V is a forestry map of the state and it illustrates in terms of timber cut the areas which might be called timber yielding. In general the wooded areas are on the uplands, on the poor soil district which cannot be of great yielding potentiality and which is therefore best adapted in the state to tree cultivation. Forestry can not, in a state



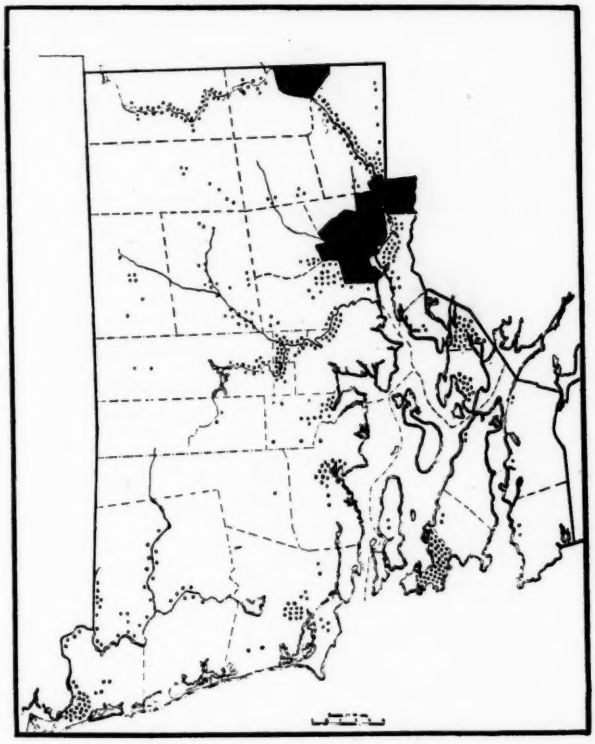
MAP V

FOREST MAP. Darkest shaded towns have greatest production.

like Rhode Island, be called a great occupation. In 1916, Rhode Island stood forty-fifth in order among the states of the United States in the production of lumber. This is, of course, partly accounted for by the small size of the state. Texas which is over 200 times the size of Rhode Island stands seventh in the list of states altho if the rating had been given in proportion to the timber cut per unit of area it would have fallen far below Rhode Island. There is a sufficient background however for the beginnings of the study of a forested belt.

Map VI is the manufacturing map for the state. Rhode Island is preëminently a manufacturing state. The map shows the distribution of all kinds of manufacturing. Every manufacturing establishment,

whether large or small that was rated as a plant in the last State Census of Manufacturing is included by a dot. Providence with 1055, Pawtucket with 236, Central Falls with 47 and Woonsocket with 127 are the greatest centers and are indicated as solid black on the map. A catalog of the manufactures of the uplands would show in general



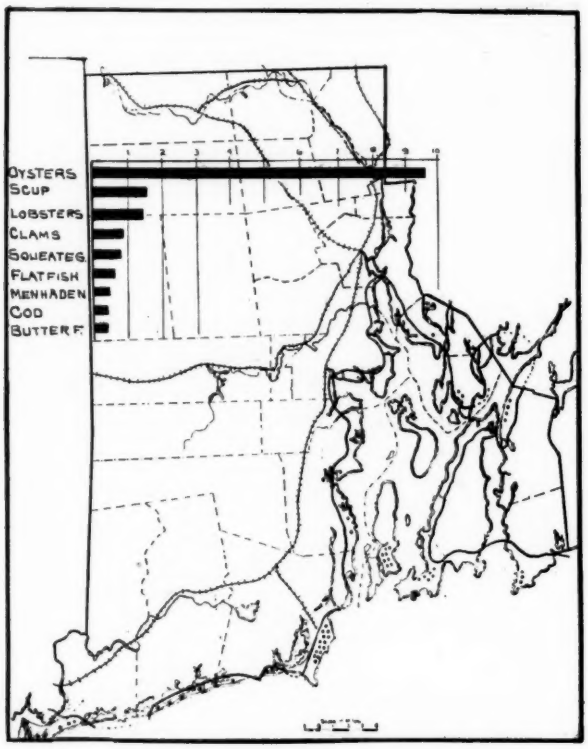
MAP VI

MANUFACTURING MAP. Each dot represents a single manufacturing establishment.

small establishments, many of them classed as lumber mills, a few carriage and wagon shops, an equal number of grist mills and the remaining of scattered production.

Apart from the preeminence in manufacturing of the lowland belt which the map shows, a secondary interest attaches itself to the streams which flow from the upland region. Across the northern towns of the state runs the Broad River eastward and enters the Blackstone River at Woonsocket. This stream serves nearly fifty manufacturing plants, mostly woolen and worsted mills, with auxiliary power, and originally this stream furnished the only power for the plants. Woonsocket has lined this stream as well as the Blackstone River with manufacturing

establishments. The Blackstone River called the best harnessed stream in New England flows thru a narrow valley after leaving Woonsocket and its rapid fall to sea level places it in the fore rank of power yielding streams. Another center of manufacturing is found in West Warwick on the Pawtuxet River. Here in this small area where the



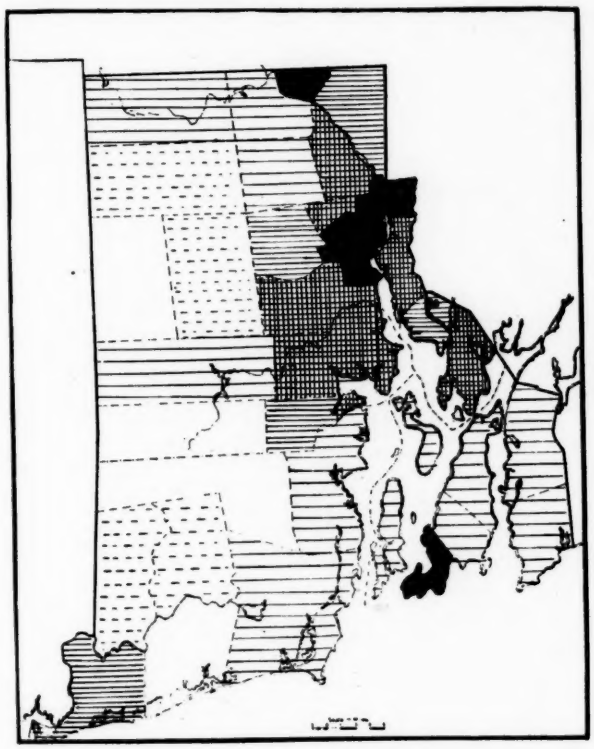
MAP VII

SHORE MAP. Each dot represents a summer hotel. Areas enclosed by lines are the largest shore colonies. Fish catch graf in hundred thousand dollars. Railroads by usual legend.

stream falls from the western uplands to the eastern lowlands, a drop of 135 feet in less than three miles, mill villages dot the stream in rapid succession.

Map VII shows particular relationships with the enclosed and bordering waters. Each dot represents a summer hotel and the lined off shore areas mark the larger cottage settlements. A graf upon the same map gives the relative value of fisheries for a recent year. Future grafs of fisheries will show a great reduction in the oyster value, as the location of three great oil companies, The Standard Oil,

Gulf Refining and the Texas near the headwaters of the bay is already polluting the waters so that the oyster catch is endangered and the income to the state from leased beds has declined in a startling manner within recent years. This is an illustration of the sacrifice of one type of occupation for a more lucrative one.



MAP VIII

DENSITY OF POPULATION MAP. From dark to light legend reads, over 2500 to a sq. mi., 500–2500, 250–500, 190–250, 64–190, less than 64.

Map VIII is a density of population map by towns. The data of this map correlate amazingly well with the fact of the other maps and open up a line of studies of movements of population which are excellent beginnings for the broader studies.

THE PROBLEM IN DETAIL

The very brief and hasty presentation of the preceding factors is sufficient to show the character of the study that might be undertaken in a small regional area. The presentation has been of a cursory

nature intentionally because the argument demanded a display of facts rather than a long line of reasoning. Before the study is ended it is frequently desirable and advisable to review the work by a series of problems which will bear on many of the conditions of more distant lands and which in addition will serve as drill upon the essential relationships of physical features and occupational densities. Space is taken for one or two types only.

A. Why is West Greenwich (marked W. G. on Map I) the least populated town in the state (a density of nine plus per square mile)?

A comparative study of the maps will show that (1) it is in the upland region entirely, (2) it has a large percentage of the poor soil, (3) it is in the lowest rank in agriculture, (4) it has an excessive number of abandoned farms, (5) unlike its neighboring town to the north it has no railroad or trolley line across it, which is further like its neighboring town to the south, another town of a large number of abandoned farms, (6) it is one of the large forest areas, and (7) it has but two manufacturing establishments.

No attempt is made to indicate causes or effects but these in most cases are obvious.

B. Why is Westerly (marked West. on Map I) the densest populated town on the western border?

The same processes are followed. In addition, the shore map adds the feature of summer visitors and its concomitant increase of traffic and business, and a quarry and mining map, if presented, would show that the upland rocks which project into this town yield a fine grade of monumental granite, which adds much to the town's commercial prosperity and prestige.

C. Of the three towns along the southern shore, why is the centrally located one of the smallest density of population?

D. What determines the location of manufacturing establishments?

E. Burrillville (B), Coventry (Co) and Westerly of the western towns excel the others in population. What reasons can you discover for this?

THE PHYSIOGRAPHY OF NORTHERN ITALY*

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The outline includes a series of lessons for ninth year students in either junior or senior high school. The extent of the work is the same as that usually considered under the general topic, "Agencies engaged in Wearing Away the Land," which includes pages 1–159 and 182–191 of Salisbury's "Physiography, Elementary Course." Time allowed is about eight weeks.

LESSON PLAN

Aim

To teach the same facts of physical geography as are at present taught in a detached manner by the use of texts on that subject but so to connect them up with human activity that they will assume their rightful place, viz., that of being worthy of study only so far as they are man's environment. In short, the aim is to humanize physical geography.

Method

Read vivid descriptions (1) of the Italian campaigns during the recent war and (2) of the regions where they were conducted, then turn to the text in physiography and other texts in general geography and commercial geography for an explanation of the physical features found.

Outline

PROBLEM: How far did physical environment control the manner of conducting the Italian campaigns in the Great War and also their results?

A. Preliminary Discussion

1. To arouse interest—news item "D'Annunzio in Fiume"—*Lit. Digest*, Sept. 27, 1919. Note the consternation his act caused among the allied statesmen. From this recall his rôle as popular leader in Italy in the spring of 1915.

*This paper received Honorable Mention in the Prize Essay Contest conducted by the American Geographical Society. It illustrates a type of humanized geography, i.e., a type that establishes the relation of physical features to human efforts and interests. While the paper presents a specialized case yet it stands as an example of what any live teacher may do in her high school course in physiography. Physiography need not be a bore if taught in this manner. Are you up to this standard in your high school teaching?—EDITOR.

Roman numerals in footnotes correspond with numbers in reference list at the end of this article.

2. Italy's relation to other European countries[1]
   a. Membership in the Triple Alliance at the beginning of the war
   b. Neutrality—Aug., 1914 to Mar., 1915
   c. Causes of estrangement from Austria
   d. Final alignment—May 23, 1915
3. Italian objectives[2]
   a. To recapture "Italia Irredenta"
      (1) Trentino
      (2) Isonzo including Trieste
   b. To make the Adriatic an Italian lake.
4. Italy's achievements in the war[3]
   a. 1915—Great expectations. How far accomplished
   b. 1916—Brilliant at first—first objective realized
      Attempt to realize second objective—successful at first—later defeated
   c. 1917—Disastrous defeat in attempting second objective
      Great criticism on part of Allies
   d. 1918—Better understanding of Italy's problem under unified command
      Assistance from Allies
      Accomplishment of second objective

B. Detailed study of the country itself

Each of the three well-defined regions is to be considered from four viewpoints, viz., (1) description of its physical features, (2) strategic importance in the war, (3) method of warfare used in it, (4) physiographic explanation of the first three preceding.

1. The Trentino
   a. Description[4] of, as to
      (1) Surface
         a) Mountainous—evidences of folding—areal extent—height—effectiveness as a barrier

[1] Relation, I. Vol. II, pp. 110–120.

[2] Objectives, I. pp. 112–115; II. Oct., 1919, pp. 368–370; III. pp. 124–128, 136, 138, 141; V. May, 1919, pp. 194–196.

[3] Achievements, I. Vol. II, pp. 125; I. Vol. III, pp. 206–208, 211–215; II. Oct., 1919, 370–372; III. 130–135, 138–141.

[4] Description, I. p. 204; II. Oct., 1919, pp. 370; III, pp. 121–126, 128, 129 and Frontispiece; IV. Mar., 1910, pp. 257–268; 2. Aug., 1913, pp. 861–942, 943–946; 3. Apr., 1915, pp. 325–340, 349–350; 4. June, 1915, pp. 553–555; 5. Oct., 1916, pp. 273, 279. V. 1. Vol. VII, (1909), pp. 169–172; 2. Vol. XII, (1913), pp. 193–197; X. pp. 357–358; XI. pp. 325–328; XIII. p. 374; XVI. pp. 258–260; XVIII. March, 1917, pp. 375–384; XIX. pp. 344–346.

b) Shape of the ridges and peaks—knife edge and needle-like vs. dome-shaped
   (a) Adaptability to secret military operations
   (b) Adaptability to concerted military action on a large scale
c) Character of the rocks
   Susceptibility to weathering, erosion by ground or running water (See avalanches and caverns)
d) Passes
   (a) Height
   (b) Character of approaches to them
   (c) By what country controlled—advantages of
   (d) Use of, for transportation—highways, trails, railways
e) Tunnels
   (a) Number and lengths
   (b) Difficulty of boring
   (c) To what country each leads
f) Valleys
   (a) Arrangement of—converging upward toward Trent vs. the usual arrangement
   (b) Shape—breadth of floors, gradient of floors, irregularities of floor and wall rock, steepness of walls

(2) Snowfields and glaciers
   a) Locations and extent
   b) Relation to snowslides
   c) Relation to travel and transportation
(3) Climate
   a) Temperature—extremes of
   b) Winds—velocity and direction
   c) Precipitation—amount and date limits for
(4) Drainage
   a) Forms of
   b) Rivers
      (a) Number and arrangement
      (b) Volume and velocity
      (c) Source of water supply
      (d) Work they do—erosive vs. depositional
      (e) Effect upon topography
      (f) Usefulness for transportation, power, water supply, and scenic effects

c) Lakes
(a) Number
(b) Relation to rivers
(c) Usefulness for reservoirs, transportation, fish supply, and summer resorts

b. Strategic importance of
(1) Location of international boundary line in respect to this region

c. Method of warfare employed in this region[5]
(1) Due to the mountainous surface
a) Positions and trenches on very summits of inaccessible peaks
b) Galleries and observation posts hollowed out in rocks —elaborate systems of, worked out by the Austrians
c) Important peaks captured by mere handfuls of men
d) Landslides—as nature's ammunition—sometimes produced artificially
e) Trenches—no continuous line of—why not constantly occupied—distance between opposing lines
f) Troops—why scattered in groups and in what kind of positions stationed
g) How defense learns of pending attacks in time to concentrate troops to meet them
h) Methods of transportation
(a) Animals—kind used—goods transported
(b) Cables and pulleys—source of power—material transported
(c) Auto-trucks—two special devices as to tires and cogs
(d) Teleferic Railways—description of—number of miles built—what they transported
i) Blocking passes—how accomplished
j) Flank attacks—how topography favored them
k) Scaling steep walls—devices used
(2) Due to drainage
a) Diversion of rivers and bridging same—how accomplished secretly

[5] Method of Warfare, I. Vol. III, pp. 193–200, 204–206; II. Oct., 1919, pp. 370–371; III. pp. 130–135; IV. 1. Apr., 1915, pp. 322–376; 2. June, 1915, pp. 618–628; 3. Oct., 1916, pp. 361–367.

(3) Due to snowfields and glaciers
  a) Location of trenches—where
  b) Equipment needed for travel across these
  c) Danger from avalanches
  d) Color of uniforms
(4) Due to severe climate
  a) Clothing and bedding required
(5) Due to combination of (1), (2), (3) and (4). Unparalleled development of aerial warfare

d. Physiographic explanation of the physical features found, etc.
(1) Crustal movements[6]
  a) In the interiors of continents
  b) Ancient changes of level
(2) Plateaus and mountains[7]
(3) Effects of plateaus and mountains upon transportation, climate, industries and products[8]
(4) Work of the atmosphere[9]
  a) Freezing and thawing
  b) Expansion and contraction of rock—rock breaking
(5) Mechanical work of ground water[10]
(6) Weathering[11]
(7) Work of running water[12]
  a) General discussion of
  b) Erosive work
    (a) Laws governing its rate[13]
    (b) Its importance in deepening of valleys[14]
    (c) Exceptional features developed by erosion—canyons, gorges, rapids, falls, narrows[15]
(8) Work of snow and ice[16]
  a) General discussion

[6] VI. pp. 187–188.
[7] VI. pp. 10–14.
[8] XIII, pp. 18–21.
[9] VI. pp. 25–28.
[10] VI. pp. 42–44.
[11] VI. pp. 44–48.
[12] VI. pp. 49–52.
[13] VI. pp. 53–59.
[14] VI. pp. 59–61.
[15] VI. pp. 73–80.
[16] VI. pp. 101–132.

b) Glaciers
(1) Types of
(2) Valley type in detail—description, movement, erosive work, depositional work
(3) Ancient glaciers and ice sheets
(a) In Europe

(9) Lakes
a) Climatic effects of
b) Economic advantages and disadvantages of[17]
c) Origin of—by gradation[18]

2. The Po Valley
a. Description[19] of, as to
(1) Location, boundaries, extent
(2) Form and surface
a) Trough—width, direction and rate of slope
b) Character of border regions
(3) Soil
a) Depth
b) Stability of, on slopes
c) Fertility
d) Physical properties of
(4) Climate
a) Temperature—general average—extremes—length of growing seasons
b) Winds—direction, velocity, relation to water boundaries
c) Precipitation—annual amount—distribution thruout the year
(5) Drainage
a) Rivers
(a) Their number and arrangement
(b) Relation to the Trentino rivers—note contrast in type
(c) Volume and velocity
(d) Constancy of water supply

[17] VI. pp. 148–149.
[18] VI. pp. 150–151.
[19] Description, III. pp. 122–124; IV. June, 1915, pp. 537–607, 630; 2. Oct., 1916, pp. 273–279, 281–285, 286, 345–368; VII. pp. 324–5, 328; VIII. pp. 264–268; IX. pp. 315–320; X. pp. 357–363; XI. pp. 325–328; XIII. pp. 371–376; XIV. All issues listed; XVI. pp. 392–408.

(e) Liability to floods
1. Braided character
2. Dykes
(f) Adaptability to irrigation
(g) Adaptability to transportation

(6) Means of communication
a) By sea—study its coast line, harbor facilities, Venice in detail

(7) Natural resources as a basis for industrial development along the lines of: stockraising, mining (no coal or iron), agriculture, commerce, manufacturing

(8) General fitness to be a home for people—really a summary of all given under "description"

b. Strategic importance in the war
(1) Relation to international boundary line
(2) As a source of military supplies, including food, clothing, etc.
(3) As an easy route for the passage of troops
(4) As affording a controlling position over the Adriatic
(5) As spoils of war
a) To demoralize non-combatants through loss of homes
b) To dishearten whole nation through loss of art treasures

c. Methods of warfare used
(1) Defensive vs. offensive
a) Use of rivers as natural means of defence
(a) As entrenchment barriers
(b) For flooding battle field
(c) Use of pontoon bridges

(2) Retreats on verge of victory due to lack of arms and ammunition

d. Physiographic topics explaining the preceding physical features, strategic importance, and methods of warfare
(1) Structural valleys
(2) River systems
a) Development of
b) Importance for transportation, water supply, and irrigation

(3) Deposition by running water with physical features resulting therefrom[20]

[20] Individual topics, VI. pp. 83-93.

a) Compound alluvial fans or piedmont alluvial plains at the bases of steep slopes
b) Alluvial plains in valley bottoms
(a) Special features
1. Braided rivers, natural levees, floods
2. Meanders, cut-offs, bayous
(b) Fertility of vs. drawbacks as farming regions
c) Deltas—at debouchures—extension of land thereby
d) Relation of these forms to agriculture, transportation, and climate

(4) Depositional work of glaciers[21]
a) Morainic
b) Fluvio-glacial
c) Influence upon agriculture and transportation

(5) Topographic features of shores
a) Type found along Adriatic[22]
b) Characteristic features—barrier beaches, tied islands, lagoons
c) Favorability for commerce

3. The Isonzo Front
a. Description[23] of, as to
(1) Location, boundaries, extent
(2) Surface
a) Mountainous—forms what is variously known as the "Goritzia position," "Goritzia Bridgehead," and "Goritzia Stronghold"
b) Divisible into three distinct regions as follows:
(a) Julian Alps—last spurs of, and the Bainsizza Plateau—towards the north
(b) Lower ground around town of Gorizia, the Wippoch river valley, towards the center
(c) The Carso (a mesa) towards the south
c) Whole flanked to the south by a series of outlying hills
d) Fronted by the valley of the Isonzo
e) Special features
(a) Type of mountain peaks and their adaptability to fortification

[21] VI. pp. 121–128.
[22] VI. pp. 155–158.
[23] Description, I. Vol. III, pp. 209–211; III. pp. 136–138.

(b) Type of plateau found in Carso—slope of its walls and character of its surface
(c) Variety of rock with propensity to formation of caverns

(3) Climate
a) Continental in type—note temperature, rainfall, and winds

(4) Drainage
a) Number and size of rivers to be found—number of lakes
b) Compare with those of Trentino
c) Description of principal river as to its source, course, character in various stretches, mouth

b. Strategic importance of the Isonzo in the war[24]

(1) To Austria
a) As a back door to its country, if held by it, would keep enemy out
b) Gateway between Julian Alps and Gulf of Trieste, therefore necessary to its control there
c) Trieste's ownership vital to Austria because of its first rank among Adriatic ports and because of its being one of Austria's very few ports
d) Trieste is a focus of roads from
(a) The plains of northern Italy.
(b) The region of southern Germany.
(c) The region of lower Austria and the Hungarian plain

(2) To Italy
a) As controlling the main gateway into Austria, viz., the way east to Laibach
b) As being the gateway to Istria with Trieste and Fiume
c) As opening the way finally to Dalmatia
d) For controlling the three regions just mentioned which as frontier lands are essential to Italy's security against Austrian supremacy in the Adriatic
e) As affording to Italy the long sought opportunity to liberate brother Italians from Austrian oppression
f) As a vital factor in making the Adriatic an Italian lake

(3) To the Allies—divided the Austrian forces

[24] Strategic Importance, I. Vol. II, pp. 114–115; Vol. III, pp. 210–211; II. Oct., 1919, p. 368; III. pp. 138–143; V. May, 1919, pp. 159–196.

c. How the war was carried on[25]
   (1) Characterized
      a) By almost insurmountable difficulties for the Italian offensive versus by easy retention of supremacy for the Austrian defense
      b) By very slow progress
      c) By short drives followed by dead halts
      d) By great persistence, until one stronghold after another was captured
      e) By meeting the difficulties that confronted them by various expedients as (a) crossing on boats or rafts, (b) crossing on pontoon bridges and if shelled repairing them very rapidly, (c) wading thru rivers purposely flooded by opening dikes, (d) trudging thru muddy flats
      f) By scaling the "Carso" walls, (a) up wooded slopes surmounted by bare, rocky heights, (b) using picks, drills, sledge-hammers, and dynamite to burrow, drive trenches, and tunnel
      g) By surprise attacks in the form of rising out of the ground within the enemy's territory
d. Physiographic explanation of the physical features found[26]
   (1) Plateau type—mesa—relation to travel
   (2) Climate of
      a) Plateaus—effects of altitude upon temperature
      b) Interior regions—effects of nearness to bodies of water
   (3) Rivers
      a) Braided type on alluvial plains
      b) Deltas
      c) Disastrous effects of floods
   (4) Ground Water
      a) Meaning of the term
      b) Chemical work of (sinks, caverns, etc.)

C. Final outcome of the war[27]
(Given in this outline merely to satisfy the interest naturally aroused by this intensive study.)
1. Cessions to Italy (as tentatively agreed upon by the Peace Commission)

[25] Method, I. pp. 208–215; II, pp. 138–143.
[26] Physiographic Explanation, VI. pp. 38–42, 80, 85–98, 238–240, 314.
[27] V. Jan., 1920, pp. 5–6; XV, pp. 12–13.

a. The Trentino
   Its boundaries extending to the watershed between the Danubian drainage and that of the Adriatic
b. The Isonzo front and a district along the Adriatic including Trieste but not Fiume

D. Application of this study to life
   Shows need of great care in establishing boundaries according to racial affiliations rather than national ambitions, if wars are to be made less imminent in the future

E. Supplementary activity for students
1. Collect pictures and stories from magazines for exhibits and for note-books
2. Collect anecdotes of Italian warfare for note-books
3. Model sand and relief maps of the three regions considered—one large map of each to be modeled co-operatively
4. Draw maps showing physical features of each region in note-books
5. Lantern picture show from slides, postcards, and any other clearcut pictures available

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AN OUTLINE LESSON ON BRAZIL*

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AIM

The aim of this lesson is to cultivate a vital interest in our southern neighbors who are represented in the Pan-American Union; to stimulate a desire to travel among these people, and to create a sympathetic relation between the United States and the Republics in the south.

PLAN

The lesson is divided into five units that form the successive steps in its development.

FIRST STEP

The lesson was introduced by the illustrated circular of the Lamport and Holt Line having "South America" as its title. This little book had been presented to the class by one of the pupils. Thirty-two of its forty-eight pages are devoted to Brazil. The frontispiece, showing the natural harbor of Rio de Janeiro with its beautiful landscape, is followed by a picture of one of the principal streets in the capital, the "Avinida Rio Branco." Other street scenes, showing the life in coast towns, all the way from Bahia to San Paulo, maintained the interest that was apparent from the first opening of the pages.

Exclamations such as these followed: "I did not know Brazil had such buildings!"; "That street looks like Broad Street"; "Philadelphia has no such fine theater"; "I did not know that Brazil has cotton mills."

The fine map at the back of the book, showing the steamship lines of the Company, told us that Brazil has a direct steamship connection with New York and ports of call at Bahia, Rio de Janeiro, and Santos. Bahia has also direct communication with Glasgow, Manchester, and Liverpool. Up to 1915, steamers of the Lamport and Holt Line ran directly to Antwerp from Rio de Janeiro. London was also connected with the capital of Brazil by a direct line.

* This paper was awarded Honorable Mention in the Prize Essay Contest conducted by the American Geographical Society. Other lesson types for the study of Brazil were published in the October, 1920 number.—EDITOR.

We have in our school library a set of pamphlets that were presented by the Philadelphia Chamber of Commerce. One of these booklets, "The Romance of Rubber" had been used in the preceding grade. Lessons on "The Rubber Hunter of the Amazon" were recalled. One of the girls suggested reading the stories relating to South America that had been written in the lower grade. These include beside the "Rubber Hunter," "A Coffee Plantation," and "A Box of Chocolates." Descriptions of the cocoa tree, the vanilla vine, and the nut trees of the forest were found in the latter story.

This review brought us into such close relation with Brazil that the omission of Philadelphia on the Lamport and Holt map led to a heated discussion concerning our foreign commerce. Such problems as the following were suggested: "Philadelphia sends ships to Europe, why not to South America?" "We have built so many ships since the war began, the Delaware is called 'The Clyde of America' "; "We build cars and locomotives in Philadelphia, I wonder if Brazil has railroads"; "The Philadelphia Chamber of Commerce sent us books for our library. Why not write to them about our commerce?"

The class decided to write a letter of inquiry to the Philadelphia Chamber of Commerce. An illustrated advertisement of the Bush Terminal in New York suggested the idea of another letter relating to the commercial interests of the United States and Brazil. Prompt replies followed our letters of inquiry. Each of the letters was accompanied by a circular, giving very definite statistics concerning the commerce of the United States. The index in each furnished the simple means of acquiring the information we desired and suggested the next step in our lesson.

SECOND STEP

The *Journal of Commerce* sent by the Bush Terminal Company, and the *Monthly Summary of Foreign Commerce of the United States*, that accompanied the letter of the Philadelphia Chamber of Commerce, created an interest in the comparative size, population, and the life interests of Brazil. To furnish the pupils the means of acquiring the desired information, the following exercises were assigned:

Exercise 1

Material: Outline maps, drawn to the same scale—North America and South America.

DIRECTIONS

Mark the boundary of Brazil. Cut out from the outline map of South America. Place the cutting on the map of North America, so

that the meridians 60° W. coincide, and the parallel 20° S. extends in a direct line from 20° N.

Write answers to the following questions:

1. How does the area of Brazil compare with that of the United States?

2. How does the population of Brazil compare with that of the United States? World Almanac 1919.

3. What states of the United States have the same relative latitude as southern Brazil?

4. What countries of North America have the same relative latitude as central Brazil?

5. References: Longmans' Atlas, "Commercial Map"; L. E. Elliott, "Brazil."

Make a list of the products of Mexico and Central America given on the commercial map of your atlas. Compare this list with the "famous nine principal articles of Brazilian exports" found on page 318 of "Brazil." Note the differences.

6. What is the general direction of the sea route from Philadelphia to Pernambuco?

7. Longmans' Atlas, "The World Density of Population."

Compare the distribution of population in Mexico and Central America with that in Brazil. Compare them as to elevation. What inference can you make?

Exercise 2

Material: Advertisements of the steamship lines cut from the *Journal of Commerce* and mounted on question sheets.

References: *Monthly Summary of Foreign Commerce of the United States* for October, 1919; L. E. Elliott, "Brazil"; Pierre Denis, "Brazil"; "The Romance of Rubber."

DIRECTIONS

Make a list of the leading exports to Brazil ranking them according to value.

Make a list of the goods that the United States imports from Brazil.

Which of the exports may Philadelphia help to supply?

What general comparison may be made between our leading exports to Brazil and the goods Brazil sends to us?

From goods sent to Brazil, are you able to imagine some of the life interests in the Brazilian towns?

The assignment varied in this exercise as each advertisement suggested the series of questions that accompanied it. The following paper illustrates the work.

What are the ports of call for the *Biran?* What was the date of her sailing? Why is there trans-shipment at Para for Manaos? See Longmans' Atlas—map of South America. Look at the vegetation map in your atlas and decide upon the cargo that may be shipped from Manaos. What does "The Romance of Rubber" say about Manaos? Read Elliott's "Brazil," pp. 218, 254 and 274 and decide upon the cargo that may be taken aboard at Ceara.

Why is Maranhao an important seaport town for the interior? Atlas, map 18 and Elliott's, "Brazil," pp. 86, 87, and 153.

Why is Bahia used as the name of San Salvador? What other town seems to have two different names? Atlas, map of South America. Reard Pierre Denis, "Brazil" p. 137.

In the work of the "Second Step" the class discovered facts concerning the great area of Brazil, the scarcity of population in the interior, its relative latitude, the distance and general direction of the steamship lines that connect the United States with the leading towns of Brazil, the exchange of our manufacture for the raw products of Brazil, and the relative importance of Philadelphia and New York in the trade with South America.

THIRD STEP

One of the preceding exercises was based on the advertisement of the Lloyd Brasileiro steamship line. This name provoked a discussion on the language and customs of the Brazilians.

In the United States history lessons we had learned about the "Line of Demarcation" that gave Brazil to Portugal. Now, we were eager to learn about the history of that country. We decided to have a question box. After each pupil had made his contribution, the box was opened and revealed the following queries.

Exercise 3

We used as reference books the "Brazil" of Pierre Denis and also L. E. Elliott's "Brazil." The children were given their questions, after the following definite assignment in these two reference books had been given:

QUESTIONS	ASSIGNMENT
How long have white people lived in Brazil?	Denis, Brazil, pp. 30–31
Where was the first settlement?	Elliott, Brazil, pp. 19, 20

Did the Indians attack the early settlers?	Elliott, Brazil, p. 20
How long was Brazil a colony of Portugal?	Elliott, Brazil, pp. 45–53
Is Brazil a Portuguese name?	Denis, Brazil p. 29,
Did the Portuguese have slaves in Brazil?	Elliot, Brazil, pp. 23, 24, and 37
Was there a revolution in Brazil?	Denis, Brazil, pp. 70–71

After these assignments had been studied each member of the class made a report of the result of his reading. The answers were then written as briefly as possible. These were arranged in order for the following dictation:

The History of Brazil

From 1500 to 1525 French and English pirates sacked the Portuguese settlements on the coast of Brazil. In 1526 a Portuguese fleet, sent from Lisbon, defeated the French and founded a post at Pernambuco. The king of Portugal then divided the territory into great estates with an ocean frontage of 150 miles. He appointed nobles as governors and gave them orders to conquer the Indians, make plantations and cut roads. From these governors have descended the Brazilians.

The white men seized the Indians and made them work on their plantations where they raised sugar for Portugal. These Indians were hunters and fishermen but poor farmers. Many of them died. Then negroes were brought from Africa to take the place of the Indians as slaves.

The early explorers took to Portugal from the forests of Brazil logs that made a red dye like that known in Europe as "brazil." This new land was then called the "Land of Brazil Wood."

When Napoleon found that Portugal was friendly to his enemy, England, the royal family of Portugal were sent to Brazil. They were welcomed at Bahia but moved on to Rio de Janeiro. The King opened the ports of Brazil to all friendly nations. When the King was able to return to Portugal, he left his son to rule Brazil. Under him, Europeans from other countries came to Brazil. Dom Pedro II, his son, followed as ruler. Under him, Brazil began to raise coffee in the region where German and Italian immigrants had settled. Factories were built and slavery was stopped.

In November, 1889, Brazil became a republic and elected a president after Dom Pedro II had been asked to leave Brazil.

FOURTH STEP

"Why are all the towns on the coast?", was not the least important of the questions in our box since it furnished the foundation of the next

step in our lesson, which has the title, "The Influence of Geography in the Development of Brazil."

In Exercise 1, found in the Second Step, we made a comparison of the vegetation regions of Brazil and those of Mexico and Central America, the countries of North America having the same relative latitude.

From this comparison, we decided that central Brazil might support more people than it now does. With this in mind, the following exercises were worked out with pictures, the maps and plates of Longmans' Atlas, and the Lamport and Holt map of South America.

Exercise 4

References: Longmans' Atlas; Theodore Roosevelt, "Through the Brazilian Wilderness"; Bowman, "South America"; Elliott, "Brazil"; Denis, "Brazil"; Lamport and Holt, "South America"; "The Romance of Rubber."

DIRECTIONS

Compare the Lamport and Holt map with the map of South America in your atlas and decide what states of Brazil have railroads connecting the interior with a seaport. Study the pictures.

Use map of South America—the inset map, in Longmans' Atlas—and decide in which of these three states railroad building was most difficult. In the inset map, what elavations do you find in the range Serra do Mar?

What business supplies the railroads of San Paulo with freight? Study the pictures in Pierre Denis' "Brazil." What freight is carried on the railroad of Rio Grande do Sul? Study the inset map on p. 18 of your atlas and compare the route leading to Porto Alegre with that leading to Rio Grande do Sul. Which follows the region occupied by European immigrants? What occupation may be possible there? Why?

Look at Lamport and Holt map of South America for the chief means of travel in northern Brazil. Study the pictures in "Through a Brazilian Wilderness," p. 284. What railroads do you find in this region, on the Lamport and Holt map?

What explanation of the necessity for a railroad along the Madeira River do you find in your atlas map of South America? Study pp. 266, 265, Bowman's "South America" and Elliott's "Brazil," pp. 135 and 156. Why is the short railroad from Para, eastward to the sea, important?

Locate Manaos and study the references, pp. 254, 255, Bowman's "South America" and Elliott's "Brazil," pp. 202 and 310.

Exercise 5

Material: Pictures, Maps and Plates, Longmans' Atlas. Study the pictures on pp. 30 and 31, Lamport and Holt and on pp. 174, 250 and 202, Roosevelt, "Through the Brazilian Wilderness," then turn to the Vegetation Map in Longmans' Atlas and find the name given to the plant growth that you find in the picture.

What is the long season in this latitude? What city of the West Indies is in the latitude of Santos and Rio de Janeiro?

What regions of vegetation found in Brazil are best suited to cultivation? Vegetation Map.

What region in the interior may be cleared for cultivation?

How do you account for the irregularity in the southern limit of the tropical forests? Look at the physical map of South America in your Atlas before answering this question.

In what part of Brazil may you find frost and snow? During what months? Why?

COPY OF A PUPIL'S PAPER

Santos and Rio de Janeiro are as near the equator as Havana. These three cities are in a region of tropical forests. Near Santos the natives live in open huts. The palm is a very common tree and plants like bamboo make a thicket near the city. Summer is the long season in these cities.

The tropical steppes are grassy plains and might be cultivated as farms—cattle may be raised on these plains. The tropical forest with interrupted vegetation is not as dense as the forests of the Amazon. I think the part near the steppes might be cleared for farming.

The tropical forests follow the high land that separates the tributaries of the Amazon. Frost and snow may be found in June, July, and August in Rio Grande do Sul, west of the coast where the land is high. Frosts sometimes come to South Carolina and Georgia and the state, Rio Grande do Sul, is as far from the equator as these states are. The winter months in South America are June, July, and August.

To test the facts obtained through the preceding exercises, brief assignments were made from recent books of travel. The pupils were called upon to verify the statements in their own papers, as each pupil gave a report of the information he had acquired from the study of his special assignment. The free discussion that followed these reports opened the way for the next step.

FIFTH STEP

A more intimate acquaintance with the life of the people came through the reading of current topics. Two newspaper clippings were brought in by different members. The first seemed to them the partial

fulfillment of Colonel Roosevelt's prophecy regarding the development of the Brazilian Wilderness. The second brings the subject of the Pan-American Union into striking significance. Both stimulated the desire to come into a closer relation with our neighbors. Thus the lesson seems to end as it began by a correspondence with special people. One of the girls has chosen Dr. Tejadas as the one who can best answer her questions. A copy of her letter is given here:

SHADY HILL SCHOOL,
GERMANTOWN, PA.,
FEB. 4, 1920

Dr. Jose Lius Tejadas,
Sucre, Bolivia.
DEAR SIR:

In your report to the Pan-American Congress, you have suggested a way for the countries of South America to pay their debts. I should like to know what countries of South America are in debt to Europe. What food can the different countries send? Nuts and cocoa are good food. Can Bolivia send these? Will Brazil send both wheat and flour as well as meat? As our winter is your summer, I suppose the wheat is being harvested now. I know that many people in Europe will starve unless food is sent to them. If you can send flour in February, we can send ours in August and September.

Hoping you will answer my letter because I need to know about the questions I have asked in my geography class.

Yours truly,
ELIZABETH GRAY

Since we eagerly await the replies to our letters, our interest in Brazil has not ended with the lesson that has taken ten fifty minute periods in school. The regular school textbooks used by the class include: Longmans', "New School Atlas"; Bowman, "South America"; Carpenter, "How the World is Fed," and Carpenter, "How the World is Clothed."

SIXTY-EIGHT CITIES OF THE UNITED STATES IN 1920[1]

DOUGLAS C. RIDGLEY
State Normal University, Normal, Illinois

The United States Census is taken every ten years. This includes exhaustive reports concerning population, agriculture, manufactures, forestry and forest products, mines and quarries.

Preparation for taking the census of 1920 began in July, 1919, and 70,000 enumerators started their work on January 2, 1920, as January 1 fell on Sunday. Their task involved a call at every home in the land during the month of January. Inquiry was made and facts recorded concerning all the people of the United States. Detailed reports were also made concerning agriculture, manufactures, and other subjects.

In the Bureau of the Census of the Department of Commerce at Washington, D. C., hundreds of persons are engaged in studying, classifying, tabulating, and publishing the census reports. Publication of all reports will not be completed until 1922. In order to give information concerning the census returns, the Bureau of the Census issues reports from day to day to the newspapers and others who are interested. The earlier reports are concerning population. Since February, 1920, readers have found census population facts almost daily in the newspapers.

A recent report on which this article is based gives the population of cities having 25,000 inhabitants or more. Some of the leading facts of this report are here summarized. Populations are given in round numbers.

CLASSES OF CITIES, NUMBER, AND TOTAL POPULATION OF EACH CLASS

	Cities having	Number	Population	Increase per cent 1910-1920
Group 1.	200,000 inhabitants or more	33	22,000,000	24.8
Group 2.	100,000 to 200,000 inhabitants	35	4,700,000	28.8
Group 3.	50,000 to 100,000 inhabitants	76	5,200,000	33.2
Group 4.	25,000 to 50,000 inhabitants	144	5,100,000	34.1
Total	25,000 inhabitants or more	288	37,000,000	
	Total population Continental United States		105,000,000	14.9

The 33 larger cities have about 20 per cent of the population of the United States, and the 288 cities included in the summary have 35

[1] This is the first of a series of articles by Professor Ridgley based on the census reports of 1920. The next article will deal with population by states. Editor.

per cent of the entire population. It is interesting to note that the first two groups of the above summary have about the same number of cities, the third group is about double the second group in number with about the same population as the second group. The fourth group is about double the third group in number with approximately the same population as the third group. Exactly one-half of the 288 cities included in the summary are in the fourth group.

CITIES OF THE 100,000 CLASS

Groups 1 and 2 of the above classification are usually referred to as cities of the 100,000 class, and this article deals with these 68 cities as a single group. The material is presented in such form as to be made the basis of a few geography lessons with classes now studying the United States or who have studied the United States previously. Names of states are not given after the names of cities in the lists below. Pupils should always be required to give the name of the state after the name of the city. The cities should be located by use of wall map, maps of United States and groups of states in textbook, and in atlases. In case a name indicates well-known cities in two or more states, the state is indicated. Since each decennial census stands for ten years as the only accurate count of population, it is of real importance to get promptly from the official census significant facts, classify them, and study their larger relationships as a sure foundation for accurate comparison during the next decade.

In 1910, there were 50 cities of the 100,000 class. The 1920 list contains these 50 and 18 additional cities. During the decade every one of the 68 cities grew in population, the percentage varying from less than one-tenth of one per cent for Spokane, Washington, to 201 per cent for Akron, Ohio, and 113 per cent for Detroit, Michigan. Los Angeles, California made the next largest percentage gain with 80 per cent. The increases in number of inhabitants varied from 35 for Spokane, Washington, to 850,000 for New York City. Detroit made the next largest gain, 520,000, and Chicago next with 510,000.

Among the 50 cities of the 100,000 class in 1910, 7 retain the same relative rank as in 1920. New York, Chicago, and Philadelphia still rank Nos. 1, 2, and 3 respectively. San Francisco retains rank as No. 11, Minneapolis as No. 18, Birmingham as 36, and Dayton as 43. Detroit moved from No. 9 to No. 4; Los Angeles from No. 17 to No. 10. No other of the 50 cities were advanced in rank more than 4. Spokane moved downward in rank from 48 to 66, Cambridge from 47 to 63, four others moved downward in rank 10 or more. Of these 50 cities,

7 retain the same rank, 16 advance in rank and 27 rank lower, but all have gained in population.

THE SIXTY-EIGHT CITIES WITH POPULATIONS IN ROUND NUMBERS

In the following list, the cities are arranged in order of population, the numbers indicating the rank of the city in 1920.

1. New York City, 5,600,000. 2. Chicago, 2,700,000. 3. Philadelphia, 1,800,000. 4. Detroit, 993,000. 5. Celveland, 796,000. 6. St. Louis, 772,000. 7. Boston, 748,000. 8. Baltimore, 733,000. 9. Pittsburgh, 588,000. 10. Los Angeles, 576,000. 11. San Francisco, 508,000. 12. Buffalo, 506,000. 13. Milwaukee, 457,000. 14. Washington, 437,000. 15. Newark, 414,000. 16. Cincinnati, 401,000. 17. New Orleans, 387,000. 18. Minneapolis, 380,000. 19. Kansas City (Mo.), 324,000. 20. Seattle, 315,000. 21. Indianapolis, 314,000. 22. Jersey City, 297,000. 23. Rochester, 295,000. 24. Portland (Oregon), 258,000. 25. Denver, 256,000. 26. Toledo, 243,000. 27. Providence, 237,000. 28. Columbus, 237,000. 29. Louisville, 234,000. 30. St. Paul, 234,000. 31. Oakland, 210,000. 32. Akron, 208,000. 33. Atlanta, 200,000. 34. Omaha, 191,000. 35. Worcester, 179,000. 36. Birmingham, 178,000. 37. Syracuse, 171,000. 38. Richmond, 171,000. 39. New Haven, 162,000. 40. Memphis, 162,000. 41. San Antonio, 161,000. 42. Dallas, 158,000. 43. Dayton, 152,000. 44. Bridgeport, 143,000. 45. Houston, 138,000. 46. Hartford, 138,000. 47. Scranton, 137,000. 48. Grand Rapids, 137,000. 49. Paterson, 135,000. 50. Youngstown, 132,000. 51. Springfield (Mass.), 129,000. 52. Des Moines, 126,000. 53. New Bedford, 121,000. 54. Fall River, 120,000. 55. Trenton, 119,000. 56. Nashville, 118,000. 57. Salt Lake City, 118,000. 58. Camden, 116,000. 59. Norfolk, 115,000. 60. Albany, 113,000. 61. Lowell, 112,000. 62. Wilmington, 110,000. 63. Cambridge, 109,000. 64. Reading, 107,000. 65. Fort Worth, 106,000. 66. Spokane, 104,000. Kansas City (Kans.), 101,000. 68. Yonkers, 100,000.

CLASSIFICATION OF THE SIXTY-EIGHT CITIES

1. Open your geography textbook at the political map of the United States. Find on the map the cities of the above list in order of rank, pronounce the name of each city and the name of the state in which it is located. If the city is not given on the map of the United States, find it on the larger map of the group of states in which it is found.

2. On an outline map of the United States, place a cross for each city, so that the two lines of the cross shall intersect at the exact location of the city. Refer to the map in your geography to make sure of the location. Near the cross place the number indicating the rank of the city.

3. With only your outline map before you, see whether you can name all the cities promptly, giving the name of the state after the name of each city.

4. Make a table to show the following facts:

   a. Number of states having 7 cities of the 100,000 class
      Write the names of states followed by the names of the cities for each state.

b. Number of states having 6 cities of the 100,000 class
Write the list as under "a" in each case.
c. Number of states having 5 cities of the 100,000 class
d. Number of states having 4 cities of the 100,000 class
e. Number of states having 3 cities of the 100,000 class
f. Number of states having 2 cities of the 100,000 class
g. Number of states having 1 city of the 100,000 class
h. Number of states having no city of the 100,000 class

In listing the states as above, the District of Columbia is to be considered among the list of states. The complete list therefore will consist of the names of 48 states and 1 federal district.

5. Make a list of the groups of states as shown on the various maps of your textbook. After the name of each state-group, write the number indicating the number of cities in the group. Add your numbers and see whether the sum is 68. Name orally the cities in each group of states, note on the map the exact position of the city, and give reasons for its location. Read in the textbook what is given about each city.

6. On a map of the United States trace the 100th meridian. This meridian divides the land surface of Continental United States into two almost equal parts. How many of the 68 cities lie west of the 100th meridian? How many east? Give reasons for this difference.

7. Name the cities of the 100,000 class located on the Mississippi River; on the Ohio River; on the Missouri River; on the Great Lakes; on the Atlantic coast; on the Gulf coast; on the Pacific coast. What proportion of the 68 cities is included in this list?

8. Which occupations—agriculture, mining, manufacturing, commerce—tend to develop large cities? Give examples and explain.

9. How many of the 68 cities are in the 11 Western States? How many in the 8 Plateau States? In the 3 Pacific Coast States? Give reasons.

10. Select 10 cities in which you are most interested and learn all you can about their advantages of location and the reasons for their development. Use textbook, commercial geographies, encyclopedias, and other reference books.

FOR THE GEOGRAPHY CLASS OR THE ARITHMETIC CLASS

The large facts of the United States Census are of sufficient importance, significance, and permanence to warrant a careful study. The facts concerning 68 cities have great geographical significance. The real meaning of the census reports is emphasized and crystallized by

having pupils solve arithmetical problems based on census figures. These problems may be solved as a geography lesson or an arithmetic lesson. The total population of Continental United States is 105,000,000; of these 68 cities, 27,000,000; of the 33 larger cities, each having 200,000 inhabitants or more, 22,000,000; of the 35 cities having between 100,000 and 200,000 inhabitants approximately 5,000,000. The following arithmetical problems are suggestive of helpful arithmetic work based on census reports. The per cents may be expressed as a whole number and one decimal place.

1. What per cent of the population of Continental United States live:

   a. In the 68 cities of the 100,000 class?
   b. In the 33 cities of the 200,000 class?
   c. In the 10 larger cities?
   d. In New York City?
   e. In Chicago?

2. New York state has a population of 10,000,000. What per cent of this population live in New York City?

3. Illinois has a population of 6,400,000. What per cent of this population live in Chicago?

4. Ohio has a population of 7,500,000. What per cent live in the 7 cities of the 100,000 class?

5. Massachusetts has a population of 3,800,000. What per cent live in its cities of the 100,000 group?

6. California has a population of 3,400,000. What per cent live in cities of over 100,000?

7. Akron, Ohio, had a population in 1910 of 69,000. Find its increase in population and its percentage of increase.

8. New York City had a population in 1910 of 4,700,000. Find its increase in population and its percentage of increase. Explain clearly why the percentage of increase for Akron and New York City are so widely different.

9. Rhode Island has a population of 600,000. What per cent live in Providence?

10. District of Columbia has a population of 437,000. What per cent live in the city of Washington?

11. Study the population figures of this article and make additional problems to be solved by members of your class. Look for large and interesting comparisons. Make problems that will help the student to understand geography as well as arithmetic.

GEOGRAPHICAL NEWS

TEXAS STATE COUNCIL

The Texas Council of Geography Teachers was represented at the State Teachers Association in November by a business session in connection with the meeting of the Geography Section. Plans were made for next year's program to be separate from the Geography Section, both, however, to be held in connection with the State Teachers Association.

The following officers were elected for 1902–21: President, Miss Harriet Smith, State Normal School, Huntsville; Vice President, Mr. J. F. Peeler, Supervisor of Geography, Dallas; Secretary-Treasurer, Mrs. Cooper, Polytechnic College, Ft. Worth.

These suggestions were made as possible lines of work to be undertaken during the year:

1. Roll of the geography teachers of the state
2. List of available speakers on geography topics
3. Report on the geography courses now being used in the best schools of the state
4. Outlines of courses in regional geography for Texas schools
5. Emphasis on adequate provision for geography in the Teacher Training schools of the state
6. Lifting the standard of geography teaching in Texas by the use of such tests and measurements as have been worked out
7. The publication of at least one bulletin a year that is not a duplication of similar material

The president plans to have a definite piece of work undertaken by the geography teachers in each of the larger cities, and another by the geography teachers of the five normal schools now giving courses in this subject. Report on these projects, with round table discussions, is the plan for the program next November.

Dr. A. E. Parkins, Associate Editor of the *Journal of Geography* and member of the National Council, was the distinguished out-of-state speaker of the Geography Section Meeting.

HARRIET SMITH, *President*